

**IT IS CLAIMED:**

1. A human cell composition comprising PKR-overexpressing cells, prepared by the process of:

- 5 (a) providing a parental cell line capable of expressing PKR and one or more cytokines;
- (b) subjecting said parental cell line to limiting dilution cloning in a manner effective to generate a plurality of subclones;
- (c) assaying said plurality of subclones for PKR expression; and
- 10 (d) selecting a PKR overexpressing subclone identified by a PKR expression level which is at least 2-fold (2X) greater than the PKR expression level of said parental cell line and growing said subclone to generate a PKR overexpressing cell line.

2. The cell composition of claim 1, wherein the preparative process further comprising:

- 15 (e) priming said PKR overexpressing cells; and
- (f) growing said primed PKR overexpressing cells in a manner effective to generate a PKR overexpressing cell line characterized by enhanced expression of one or more cytokines.

3. The cell composition of claim 2, wherein said preparative process further comprising treating said primed, PKR overexpressing cells before said growing (f).

4. The cell composition of claim 1, wherein said parental cell line is subjected to limiting dilution cloning at least 3 times.

5. The cell composition of claim 2, wherein said priming includes culturing the cells with phorbol myristate acetate (PMA) or sodium butyrate.

6. The cell composition of claim 3, wherein said treating includes non-viral induction with dsRNA.

30 7. The cell composition of claim 3, wherein said treating includes viral induction with Sendai virus.

8. The cell composition of claim 3, wherein said one or more cytokines are selected from the group consisting of  $\alpha$ -interferon,  $\beta$ -interferon, TNF- $\beta$ , IL-6 and IL-8, IL-10, IFN-  
35 gamma, IL-12 and GM-CSF.

9. The cell composition of claim 3, wherein said one or more cytokines include  $\alpha$ - or  $\beta$ -interferon.

10. A human cell composition for use in cytokine production, comprising:

5       PKR overexpressing cells which have been treated and induced in a manner effective to result in enhanced PKR and cytokine production, wherein the cells are characterized by a level of expression or production of one or more cytokines that is at least 2-fold greater than that produced by the corresponding parental cell line.

10       11. A method for producing a cell line that overexpresses PKR, said method comprising:

(a) providing a parental cell line capable of expressing PKR and one or more cytokines;

(b) subjecting said parental cell line to limiting dilution cloning in a manner effective to generate a plurality of subclones;

(c) assaying said plurality of subclones for PKR expression; and

15       (d) selecting a PKR overexpressing subclone identified by a PKR expression level which is at least 2-fold (2X) greater than the PKR expression level of said parental cell line; and

(e) growing said subclone to generate a PKR overexpressing cell line.

12. The method according to claim 11 further comprising:

20       priming said PKR overexpressing cell line before said growing;

13. The method according to claim 12 further comprising:

inducing said primed, PKR overexpressing cell line before said growing.

25       14. The method of claim 12, wherein said priming includes culturing said PKR overexpressing cells with phorbol myristate acetate (PMA) or sodium butyrate.

15. The method of claim 13, wherein said inducing includes non-viral induction with dsRNA and viral induction with Sendai virus.

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16. The method of claim 11, wherein said growing is in a manner effective to generate a PKR overexpressing cell line characterized by enhanced expression of one or more cytokines.

35       17. The method according to claim 16, wherein said one or more cytokines are selected from the group consisting of  $\alpha$ -interferon,  $\beta$ -interferon, TNF- $\beta$ , IL-6 and IL-8.

18. The method according to claim 16, wherein said one or more cytokines include  $\alpha$ - or  $\beta$ -interferon.

5 19. A human cell composition for enhanced cytokines production comprising PKR-overexpressing cells, prepared by a process comprising:

(a) providing a parental cell line capable of expressing PKR and a heterologous nucleic acid construct that comprises a first coding sequence for a biologically active form of human PKR and a second coding sequence for a selectable marker;

10 (b) introducing said heterologous nucleic acid sequence construct into said parental cell line in manner effective to result in expression of PKR and said selectable marker;

(c) culturing said transformed parental cells under conditions effective to enhance expression of PKR;

15 (d) selecting transformed, PKR overexpressing cells, wherein said PKR overexpressing cells are identified by a PKR expression level which is at least 2-fold (2X) greater than the PKR expression level of the non-transformed parental cell line;

(e) growing said selected PKR overexpressing cells; and

(f) repeating said selection and growing to generate PKR overexpressing progeny cell lines characterized by enhanced expression of one or more cytokines.

20 20. The cell composition of claim 19, wherein said preparative process further comprising:

priming said PKR overexpressing cells and treating said primed, PKR overexpressing cells before said growing.

25 21. The cell composition of claim 20, wherein said priming includes culturing the cells with phorbol myristate acetate (PMA) or sodium butyrate.

30 22. The cell composition of claim 20, wherein said treating includes non-viral induction with dsRNA or viral induction with Sendai virus.

35 23. The cell composition of claim 19, wherein said one or more cytokines are selected from the group consisting of  $\alpha$ -interferon,  $\beta$ -interferon, TNF- $\beta$ , IL-6 and IL-8, IL-10, IFN-gamma, IL-12 and GM-CSF.

24. The cell composition of claim 19, wherein said one or more cytokines include  $\alpha$ - or  $\beta$ -interferon.